"PDCA" shorten the time of the preliminary report of blood culture effectively. So this program was included in the SOP.
Results: Data was collected from Feb. to Jul. in 2014. The target time of preliminary report of blood culture is less than 48 hours. Time of it in January was 76.2 hours (before improving stage). From February to March was average 49.9 hours (improving stage). In April was 45.7 hours (Improved stage). From May to July was less than 48 hours (maintenance stage).
Conclusions: We use the PDCA approach to reduce the preliminary report time of blood culture during 2 months successfully. It proved "PDCA" is a good tool for enhancing the quality of examination.

PS 1-028

APPLYING INTELLIGENCE TECHNIQUES TO ESTABLISHMENT PREDICTING MODEL IN INFECTION CONTROL

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Purpose: As the identification of infection always takes time and costs money, the study wishes to build up an infection risk-predicting model by using the factors of patients' conditions, medication, and environment, thus providing healthcare providers with useful suggestions and enhancing patients' safety.
Methods: We use the data-mining techniques in artificial intelligence when reviewing charts, so as to create a computer-based ancillary diagnosis that considers patients' conditions, medication, and cause of infection. Intelligent algorithm is used for analysis and comparison of accuracy in various methods.
Results: We use Apriori algorithm to identify the association rule of infection and incorporate it into clustering. Then we use the artificial neural network to build up a predicting model. The accuracy rate in identifying infections is 84.6%.(figure 1)

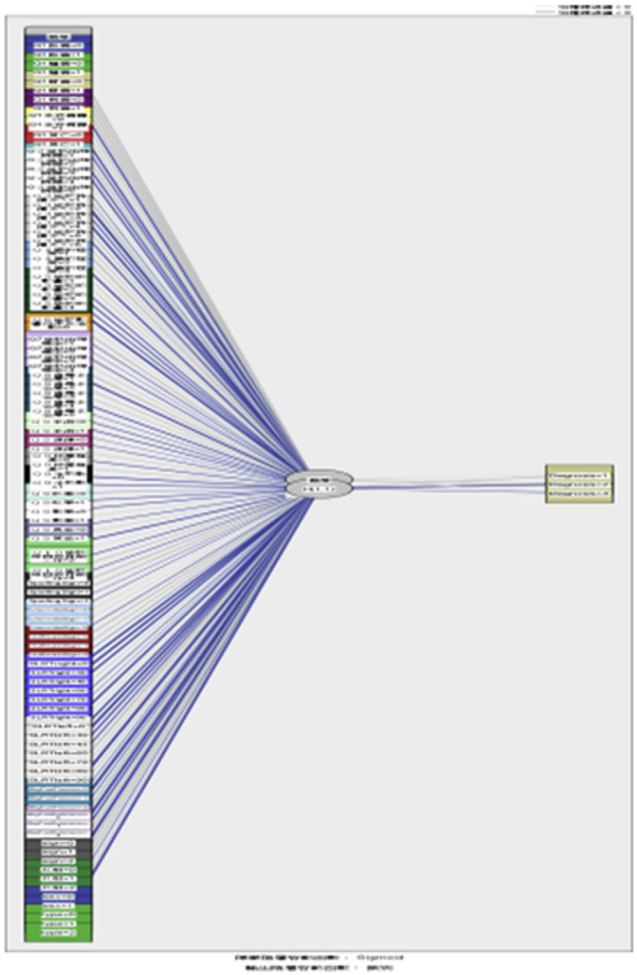

Figure 1 artificial neural network.

Conclusions: The research focuses on the analysis of infection resulting from similar causes and finds the artificial neural network generates the best results. The model could come up with useful suggestions for the patients of high infection risk that have similar symptoms. Therefore, healthcare providers could take precautions measures ahead of time, thus saving medical costs and ensuring patients' safety.
Keywords Intelligence techniques, Predicting model, Infection control

PS 1-029

EFFECTIVENESS OF 2D BARCODE TRACKING IN RECORDING INSTRUMENT STERILIZATION & AVOIDING SPREAD OF INFECTION IN OPERATING THEATRE

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Purpose: When preparing instruments for an operation, the instrument log, date and instrument classifiers were hand-written on a list. It is difficult to recall target log of instruments when the patient is found to have infection after the operation, especially Creutzfeldt-Jakob disease, in which the infection causing prions may not be inactivated by means of routine surgical instrument sterilization procedures. It is also not easy to find the affected instruments when any problem arises during sterilization cycle. Therefore a computer system has to be built up for quality control.
Methods: The instrument picking list was revised. A spreadsheet was developed with all instruments recorded. The information system was then linked up with a 2D barcode generating system, which carries information including name and identifier of individual instrument, sterilization cycle number, date of sterilization, name of packers and packing shelf life. All items that will be sterilized in were recorded in a new spreadsheet.
Results: From 2012 to present, all instruments were 'digitalize'. All staffs adapted to the system well. No expired instrument was used and there was no recall of instruments.
Conclusions: Quality and safety is one of the crucial factors contributing to a successful surgery. The 2D barcode instrument tracking system offers effective, time saving and accurate measure for preparing instruments for operations and also for recalling instruments whenever necessary.

PS 1-030

MINIMIZING THE INFECTION DENSITY FROM PATIENTS' GENITOURINARY TRACT AT RESPIRATORY CARE WARDS

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Purposes: The purposes of this project for patients at respiratory care ward were to ameliorate the infection density from genitourinary tract system, to promote nursing care quality and to decrease spending cost. Because of the high infection density from their genitourinary tract system at our respiratory care ward, we set up a project team to minimize its infection density at expectation.
Methods: Analyzing the project between July 2014 and September 2014, it unveiled some reasons, including care assistants had no adequate knowledge at urinary tract infection, they provided care imprecisely, they practiced monitoring technology for urinary drainage imperfectly and they were not familiar with the complex contents about caring retained urinary catheter. After researching we proposed solutions, including
(1) to hold continue education of "Foley care bundle" for nurse,
(2) to hold education programs of perineal flushing procedure and clean process for care assistants,
(3) to develop a care standard of retained urinary catheter in according to ward characteristics,
(4) to amendment an evaluation form for an usual urinary catheterization nursing,
(5) to create an evaluation form for perineal flushing, and
(6) to practice a bundle care for urinary catheterization.
Results: After improvement of the above measures, the infection density fell by an average of 10.5 ‰ to 4.2 ‰. Urinary Catheter-related infection rate rose to an average of 4.2 ‰ to 6.0 ‰.